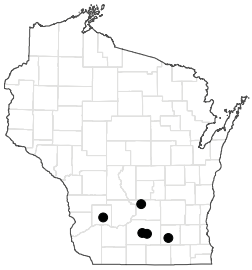
Goodwill Industries of South Central Wisconsin



Madison, WI (headquarters)

For Goodwill Industries of South Central Wisconsin, recycling is a means to achieving its larger goal of helping people with disabilities and other special needs find housing and employment and be fully integrated into their communities.

"We wouldn't exist if it wasn't for our mission," said director of operations Sue Ann Kraus.

To accomplish this mission, Goodwill provides housing and employment for disabled individuals, often in conjunction with local, state and federal governments. To help fund these programs, it operates six retail stores in its 14-county region. The stores generate about $6 million in annual sales.

Annual sales of $6 million from recycled goods help Goodwill fund its mission.

Each of the six stores (located in Madison, Monona, Portage, Richland Center and Fort Atkinson) has a donation center associated with it, accepting textiles, electronics, housewares and other "hard goods," such as books and furniture. In 2005, the South Central Wisconsin organization collected approximately 24 million pounds of donated goods, including 12 million pounds of textiles..

Quick facts: Goodwill Industries

Recycled materials collected: textiles, books, furniture, housewares, electronics, other household items

Recycling start date: 1971

Number of employees: 300+

Contact: Sue Ann Kraus, 608.246.3140, skraus@goodwillscwi.org

Web site: www.goodwillscwi.org

Textiles donated to Goodwill await sorting at its central processing facility in Madison. Photo courtesy Goodwill Industries of South Central Wisconsin.

Most of the donations are sent to a 20,000-square-foot central processing facility in Madison, where some of Goodwill's 300 employees sort and prepare them for distribution among the retail stores. Employees keep an eye out for "exceptional items" to put on shopgoodwill.com, an eBay-style auction site launched in 2003 that allows Goodwill to generate more revenue for some items. Unusable or unsold items are recycled or sent to other Goodwill branches whenever possible.

Kraus said the organization has the capacity to receive more donations and is always trying to increase its donor base, though it has to compete with a number of other organizations (including for-profit businesses) to receive the same items. Goodwill partners with businesses such as Boston Store for donation drives and receives surplus or return items from a variety of local retailers.

"Our greatest challenge is to continue to build our donations while remaining responsible stewards of these resources," Kraus said. "Only in doing so will we be better able to serve more people in our local community." ■

Habitat for Humanity of Dane County ReStore

Madison, WI

During her 14 years as a carpenter, Jen Voichick saw a lot of building materials go to waste. When an injury forced her to retire from remodeling work, she wondered if she could do something to make use of surplus materials. Her idea was a place where homeowners, suppliers and contractors could donate flooring, lumber and other usable materials, and builders and remodelers could shop for cheap supplies.

When Voichick approached Habitat for Humanity of Dane County, she discovered she wasn't the first one with such an idea. Habitat "ReStores" were popping up around the country. Using a manual from the Austin, Texas, ReStore and a grant from the DNR, Voichick launched the Habitat for Humanity of Dane County ReStore in September 2001.

Since then, the ReStore has kept nearly 3,000 tons of usable building materials out of the landfill and has seen annual sales increase from $340,000 to nearly $600,000. Through fall 2005, the ReStore had raised enough money to build 12 Habitat homes.

Voichick said about half of the materials the store receives are surplus donated by contractors and suppliers and about half are from remodeling and deconstruction projects. The ReStore offers assistance with deconstruction for a nominal fee, and also offers a pick-up service for large donations.

The ReStore accepts a wide range of building supplies, including flooring, cabinets, light fixtures, lumber, hardware and insulated windows. Most are sold at 50-75% off the retail price.

Customers can browse through used or surplus building supplies such as doors at the Habitat for Humanity of Dane County ReStore in Madison. Photo by Sarah Murray.

Quick facts: Habitat ReStore

Recycled materials collected: construction & demolition waste/surplus, including cabinets, doors, flooring, hardware, lighting fixtures, lumber, plumbing, windows

Recycling start date: 2001

Number of employees: 6

Contact: Jen Voichick, 608.661.2813

Web site: www.restoredane.org

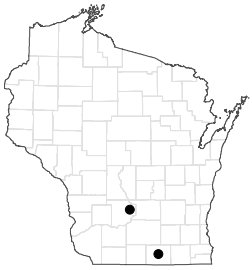
Since 2001, the ReStore has sold $1.5 million of materials that would have ended up in the landfill.

In fall 2005, with help from a DNR Solid Waste Reduction and Recycling Demonstration grant, the store hosted the first national ReStore conference. The conference attracted more than 200 participants from 34 states and Canada and helped spur the creation of other ReStores in Milwaukee, Waukesha and La Crosse, set to open beginning in spring 2006.

In addition to serving as a model for others, the ReStore has been an active community member in Madison. It offers "fix-it" workshops in the public library next door and has worked with the city and others on projects to reduce construction and demolition (C&D) waste. "I really like being a part of this community," Voichick said. "I feel like this store was a gift to this town." ■

Humane Manufacturing Company LLC

Baraboo and Janesville, WI



"At a recent trade show, one of our competitors came over and said our mats were the industry standard," said Tonia Frenzel, marketing coordinator for Humane Manufacturing Company LLC.

The company is a rubber manufacturer that recycles farm- and truck-grade tires into products for end users. "We get our materials from all over the U.S.," said Frenzel. Humane receives ground-up tires, which are then re-ground to remove any remaining impurities. "We go through 20 million pounds of tire material a year that would otherwise end up in landfills," Frenzel said.

"We've doubled in size in the last five years," Frenzel said.

The company's workers mold rubber into mats and flooring for three primary industries: fitness, industrial and animal. Some of its products include rubber flooring for weight rooms, locker rooms and clubhouses; anti-fatigue mats for assembly lines or laboratories; roof-guard pads; machinery pads; cow, hog, horse and zoo mats; and basically any place that needs resilient or agility flooring.

Frenzel said there is a lot of growth involved with the rubber manufacturing industry, particularly with opportunities in fitness flooring. "We've doubled in size in the last five years," she said.

Quick facts: Humane Manufacturing

Recycled materials used: farm- and truck-grade rubber tires
Recycling start date: 1972
Number of employees: 80
Contact: 1.800.369.6263 or 608.356.8336, info@humanemfg.com
Web site: www.humanemfg.com

Workers push a full mold into a press at Humane Manufacturing's Janesville plant. Photo courtesy Humane Manufacturing Company LLC.

The company has dealer networks that are both nationwide and also overseas. "Our dealer networks include Japan, Sweden, Puerto Rico, Jamaica and Afghanistan," Frenzel said. Dealerships are pending in Norway, United Arab Emirates, Ireland, Lebanon, Saudi Arabia, Syria, Egypt, Jordan, Iraq and Kuwait. Frenzel explained that the company's dealership with Japan was won with the development of a new product for the dairy industry. Humane also has products in several overseas military bases.

The company has two plants, in Baraboo and Janesville, with a total of 80 employees. Humane's president, Keith Peterson, is a member of the Wisconsin Manufacturing Extension Partnership. "We are a lien manufacturer," Frenzel said, "and several of our employees are lien certified."

Humane Manufacturing was established in 1907 as a steel fabricating company for dairy farm equipment. In 1972, it began manufacturing rubber mats. In 1997, it sold off its steel division and now solely concentrates on rubber mats and flooring.

"We only use recycled materials," Frenzel said. "We're proud that our materials are made in the U.S.A." ■

Kohler Company

Kohler, WI

"It's very exciting to try to find new ways to use materials," said Nathan Nissen, waste management supervisor for Kohler Co. While Kohler has been using and recycling scrap metal since it began in 1873, in recent decades it has added foundry sand, foundry slag, vitreous plumbing scrap, paper, cardboard and other materials to its recycling efforts.

Kohler employs 31,000 people worldwide, including about 8,000 at its headquarters in Kohler, WI. Nissen said the company devotes significant resources to its recycling efforts, including employees who sort scrap metal and haul recyclables to their destinations.

"Mr. Kohler places a very high priority on environmental stewardship," Nissen said.

"Mr. Kohler places a very high priority on environmental stewardship, and believes in beneficial reuse initiatives," Nissen said.

In addition to buying and selling scrap metal for its plumbing products, Kohler has sought ways to use some of its factory byproducts. One program uses materials like foundry sand and pottery cull (scrap plumbing material) to make structural fill, a material capable of supporting anticipated building loads. The fill has been used in several projects, including under new stores and as a screening berm at the 2004 PGA championship.

Kohler works with contractors and architects to help them consider the alternative material in construction projects. Nissen said the fill is "a known commodity, but not something that's on autopilot," and that Kohler is always looking for good projects in which to use the fill.

Currently, Kohler is looking into additional ways to reuse factory byproducts, including gypsum and foundry sand. The sand would be combined with paper mill sludge to form artificial topsoil for use in areas such as reclaimed quarries, though Nissen said one challenge will be ensuring that such a material meets regulatory requirements. "We're just trying to figure out what the appropriate controls are to protect the environment," he said.

Kohler also bales and sells paper and cardboard generated in its offices by the truckload.

Nissen said that finding new ways to use materials has many benefits, including saving money, conserving natural resources, avoiding environmental damage and providing the challenge of proving the recycled materials are as good as native alternatives.

"It's good for the company, good for the environment and fulfills our corporate mission to be good environmental stewards," he said. ■

Foundry sand (dark) and pottery cull (light) are spread as structural fill on a site for a Target store. Photo courtesy Kohler Company.

Quick facts: Kohler Company

Recycled materials used: foundry sand and other factory byproducts, scrap metal, pottery scrap, office paper, cardboard

Recycling start date: 1873

Number of employees: 31,000 worldwide; 8,000 in Kohler, WI

Contact: Nathan Nissen, 920.453.6312, nathan.nissen@kohler.com

Web site: www.kohler.com

Miller Brewing Company

Milwaukee, WI

Beer and recycling go hand in hand—the bottles and cans used to package the beverage are some of the most commonly recycled items. One prominent Wisconsin brewery is taking this relationship even further.

"Miller Brewing Company has a multi-faceted program dealing with sustainable development and working toward zero waste," said Jim Surfus, a senior environmental engineer in Miller's corporate offices.

He and Audrey Templeton, environmental coordinator at the company's Milwaukee brewery, described Miller's comprehensive approach to charting its resource use and finding ways to reduce, reuse and recycle. The company tracks performance indicators, such as the amount of waste going to landfills, at each of its breweries and works to educate its employees about recycling with a training video tailored to each facility.

The brewer recycles a wide range of packaging materials, including wooden pallets and large plastic bags. The Milwaukee brewery alone recycled about 3,100 tons of cardboard, glass and aluminum in fiscal year 2005.

Miller works with Cargill to find beneficial reuses for 100% of manufacturing byproducts such as spent brewer's grain, used as animal feed, and spent brewer's yeast, used in food products such as soups and gravies. In the future, Templeton said, the company would like to recycle aged beer and to digest spent brewer's grain to produce energy-generating biogas.

A truck loads spent brewer's grain for use as a cattle feed supplement. Photo courtesy Miller Brewing Company.

Quick facts: Miller Brewing Co.

Materials recycled: brewer's grain and yeast, glass, aluminum, plastic, paper, cardboard, pallets, electronics, other packaging; uses recycled content in packaging

Recycling start date: ranges from decades ago to last few years for different products

Number of employees: 1,700 at Milwaukee brewery; 5,800 worldwide

Contact: Audrey Templeton, 414.931.2409, atempleton@mbco.com

Web site: www.millerbrewing.com

Reducing the material in its containers saved Miller 100,000 tons of glass and 50,000 tons of aluminum a year.

Waste reduction is a priority, too. The company has reduced the amount of materials that go into its beverage containers, saving 50,000 tons of aluminum and 100,000 tons of glass per year company-wide. It also incorporates recycled content in those containers, and looks for materials that can be easily recycled.

While there are markets for most of the materials Miller recycles, Templeton said the main goal is waste reduction. "Our goal is to reduce the waste [going] to landfill, not make money on some of these products," she said, noting that Miller looks at the long-term costs and benefits of resource use.

Cargill's Scott Busch summed up the nature of recycling for a large company like Miller. "Overall, it's a social responsibility," he said. "If done right, it's economically feasible for the operation, too." ■

Minergy Corp.

Neenah, WI

Most people don't like to think about sludge, much less find a beneficial use for it. But Minergy Corp., a subsidiary of Wisconsin Energy Corp., has found a way to eliminate the environmental and economic liabilities of paper mill sludge while turning it into a usable product, generating energy and saving landfill space in the process.

At its 50,000-square-foot Fox Valley Glass Aggregate Plant in Neenah, the company converts sludge, a byproduct of the manufacturing process in eight nearby paper mills, into glass aggregate.

Quick facts: Minergy Corp.

Recycled materials used: paper mill sludge and municipal sludge (biosolids)

Recycling start date: 1998

Number of employees: 27 in Neenah plant; 40 total

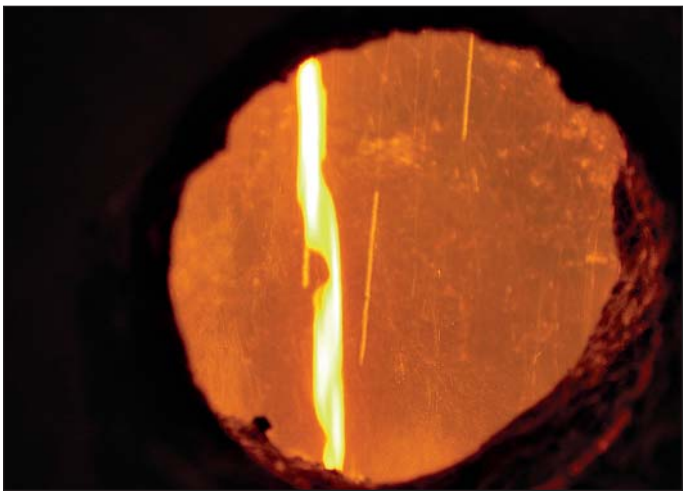
Contact: Bob Paulson, 920.727.1919, info@minergy.com

Web site: www.minergy.com

Minergy's Neenah plant is a world leader in producing glass aggregate and energy from paper mill sludge.

The plant is the first facility of its kind in the world and has been producing the aggregate since 1998. It receives up to 1,300 tons of sludge a day from the mills. In July 2005, it processed its 2 millionth ton of sludge, and turns out close to 60,000 tons of glass aggregate per year.

"We recycle high-volume sludges that have both an organic fraction and an inorganic fraction," said Bob Paulson, the company's manager of business development.



Molten glass exits a cyclone furnace at Minergy's Fox Valley Glass Aggregate Plant. Photo courtesy Minergy Corp.

After drying the sludge, Minergy uses a patented version of a process known as vitrification to convert it into glass aggregate. Two large cyclone furnaces melt the sludge, completely consuming the organic portion of the material to help fuel the process and produce steam, which is used to generate power for Minergy's plant and three nearby paper mills.

The process melts the remaining, inorganic portion of the sludge, which consists of ash, clay and other minerals, into liquid glass, which is then cooled into glass aggregate. The aggregate is then used in applications such as construction fill, roofing shingle granules, sandblasting grit, and concrete or asphalt additives.

Now, Minergy is adapting the technology for other uses, including a DNR-funded pilot project processing Fox River sediment contaminated with polychlorinated biphenyls (PCBs). The company is building the first large-scale commercial facility for processing municipal sludge in Zion, IL building on the technology used at the Neenah plant. Paulson said the technology could be attractive to other municipalities in the future, since it both reduces landfill costs and provides an alternative energy source.

Paulson said the market for the glass aggregate is strong. "It's taken us awhile to get here, but we certainly have strong local demand," he said. "Now our problem is we don't make enough of it." ■

N.E.W. Plastics Corp.

Luxemburg, WI

Ever wonder where that milk jug ends up after you toss it in the recycling bin? One place might be your back deck.

RENEW Plastics, a division of the Luxemburg, WI-based N.E.W. Plastics, has been making plastic lumber and sheeting for decking, outdoor furniture, boat docks, animal stall liners and other products since the early 1970s.

"I feel that we can make the claim that we're the first plastic lumber manufacturer in North America," said vice president Lonnie Vincent. His father and mother, Irvin and Nancy, founded the company and developed the process for turning recycled high density polyethylene (HDPE) plastic resin—used in containers marked with the #2 recycling symbol—into plastic lumber.

"A lot of people feel that a recycled product is inferior," Vincent said. "That's a big fallacy."

Today, the company has 70 employees in its RENEW division and the capacity to convert 25 million pounds of recycled plastic a year into its products. "We've been growing at a rapid clip every year," Vincent said.

The finished products are colored throughout and UV-resistant, so the color will not fade. The company's Evolve plastic lumber is up to 96% recycled plastic and can be recycled again in the future.

One of N.E.W. Plastics Corp.'s recycled products is a durable plastic liner for the inside edge of semis, which keeps loads from scuffing and scratching the sides.
Photo by Robert Queen.

The company sources recycled plastic—the raw material for the lumber—from around the upper Midwest, as well as from elsewhere in the United States and around the world. "It's a global marketplace," Vincent said. N.E.W. faces a special challenge because it demands clean, high-quality plastic resin for its products. "We always have a challenge finding good, high quality product," he said.

Related to this challenge, Vincent said, is educating the public on recycling and avoiding contamination of recyclables—such as leaving caps on plastic bottles—that can lead to lower quality raw materials.

"We are so demanding because we're putting out the premium product," he said. "We need the best quality recovered material."

Another challenge, Vincent said, is the expectation that products made with recycled material should be cheaper or are of lower quality than products made with virgin material. "A lot of people feel that a recycled product is inferior," he said. "That is a big fallacy. … If you get the right material in and take your time in producing it, it will perform just as well or better [than other products]." ■

Quick facts: N.E.W. Plastics

Recycled materials collected: HDPE plastics (milk jugs, water bottles, etc.)
Recycling start date: 1973
Number of employees: 218 overall; 70 in RENEW division
Contact: Lonnie Vincent, 920.845.2326
Web site: www.newplastics.com, www.renewplastics.com

Packaging Corporation of America

Tomahawk, WI

"We're strong advocates in recycling where it makes economic and technical sense," said John Piotrowski, a senior environmental engineer at Packaging Corporation of America's Tomahawk plant. Using this model, the plant has undertaken a number of innovative recycling efforts in recent years, finding beneficial reuses for manufacturing byproducts as well as utilizing recycled fiber in its products.

The Tomahawk plant, which employs 440 people, is one of four pulp and paper mills owned by PCA, headquartered in Lake Forest, Illinois. The plant produces corrugating medium—the wavy layer in corrugated cardboard—which is sent to PCA's 70 box plants to be made into packaging. Four of these plants are located in Burlington, Colby, Franklin and Milwaukee, Wisconsin.

"The quantity [of recycled fiber] in Wisconsin is far less than what this facility can consume," Piotrowski said.

Piotrowski said the Tomahawk plant uses two types of recycled fiber: double-lined kraft (DLK), which comes primarily from the trimmings left over in box plants, and old corrugated cardboard (OCC) recycled by consumers. The Tomahawk plant alone uses 170,000 tons of DLK and 36,000 tons of OCC each year. The finished paper has about 30–35% recycled content, depending on the grade.

"The quantity [of fiber] available in Wisconsin is far less than what this facility can consume," Piotrowski said. PCA tries to source its fiber primarily from the Midwest, he said, but the recycled fiber market is increasingly global, and a large consumer like China can change prices overnight.

In addition to using recycled fiber, the Tomahawk plant has sought to utilize the byproducts of its manufacturing process. Initiatives have included using boiler ash for landfill cover material, using crushed concrete from old concrete slabs in construction projects, selling boiler cinders to asphalt companies to replace limestone chips, and collecting biogas from its wastewater treatment plant to burn in place of natural gas. The plant also recycles 12,000–15,000 gallons of used oil per year.

The Tomahawk plant has won several awards for its recycling initiatives, and Piotrowski said staff continue to look for "economically sensible and technically feasible" recycling opportunities. "We have made it a point to have a very aggressive and focused effort on recycling," he said. ■

A pile of crushed concrete being recycled by PCA's Tomahawk plant. The concrete is used in construction projects such as a new parking pad for semi trucks. Photo courtesy PCA.

Quick facts: PCA Tomahawk plant

Recycled materials used: recycled fiber, concrete, boiler ash, boiler cinders, biogas

Recycling start date: Mid-1900s for recycled fiber; past decade for other materials

Number of employees: 440

Contact: John Piotrowski, jpiotrowski@packagincorp.com

Web site: www.packagingcorp.com